CARBON NANOTUBE PARTICULATE ELECTRON EMITTERS

ABSTRACT

A carbon nanotube electron emitter comprises carbon nanotube particulates on a surface, wherein the carbon nanotube particulates comprise entangled small-diameter carbon nanotubes having one, two, three or four walls and having an outer wall diameter in the range of about 0.5 nm and about 3 nm. The carbon nanotube particulate electron emitter has a cross-sectional dimensional in a range of about 0.1 micron and about 100 microns, preferably about 0.1 micron to about 3 microns. The carbon nanotube particulate electron emitters can comprise ropes of carbon nanotubes. The carbon nanotube particulates are easily dispersed in polymers and other media. The carbon nanotube particulates can be dispersed in a viscous media and applied to a surface by various means. The carbon nanotube particulate electron emitter exhibits very low "turn-on" emission field and can be used in a variety of field emission devices.